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Systematic Errors in Short-Wave Cloud Forcing from AMIP

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Abstract:

Model output from a selected set of AMIP models shows that the tropical short-wave cloud radiative forcing is systematically too strong when compared to satellite observations. The models also produce a negative systematic error in cloud amount when compared to ISCCP in the extratropics. The cloud amount error accounts for much of the error in short-wave cloud forcing because short-wave cloud forcing has a linear dependence on cloud amount. Some of the errors in short-wave cloud radiative forcing cannot be explained by errors in cloud amount and may be due to errors in cloud optical properties.

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